

## **REMARKS**

In the Office Action of September 14, 2004, the Examiner objected to the drawings; rejected claims 3 and 4 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over US Patent No. 6,732,685 to Leman; rejected claim 5 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Leman in view of US Patent No. 4,050,435 to Fuller, Jr. et al. or in view of US Patent No. 4,423,709 to Arrieta; rejected claims 6-8 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Leman; rejected claims 12 and 15-19 under 35 U.S.C. § 103(a) as being obvious over Fuller, Jr. et al.; rejected claims 12 and 15-20 under 35 U.S.C. § 103(a) as being obvious over Arrieta; objected to claims 13 and 14 as being dependent upon a rejected base claim, but indicated that claims 13 and 14 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims; and allowed claims 1, 2, and 9-11.

Applicant wishes to thank the Examiner for the indication of allowable subject matter in claims 13 and 14 and for allowing claims 1, 2, and 9-11.

Applicant has amended claims 1 and 19, and has added new claims 21-40 to claim further aspects of Applicant's invention. Accordingly, claims 1-40 are pending in this application. No new matter has been added by these claim amendments.

Applicant has also amended Figs. 2 and 7-9 to correct typographical errors. Specifically, in Fig. 2, the reference number 43 and associated leader line have been deleted, and the reference number 85 and associated leader line have been relocated. Figs. 7-9 have been amended to correct a typographical error in the axis label. No new matter has been added by these drawing amendments.

Applicant wishes to thank the Examiner for the courtesy of a personal interview on December 17, 2004. This Reply is consistent with the issues discussed and the agreements reached during the interview.

Regarding the objection to the drawings, Applicant has amended the drawings as suggested by the Examiner. In particular, Figs. 7-9 have been amended to replace the axis label "VALUE LIFT" with the label "VALVE LIFT." Accordingly, Applicant requests the objection to the drawings be withdrawn.

Assignee, Caterpillar, Inc., duly organized under the laws of Delaware and having its principal place of business at 100 N.E. Adams Street, Peoria, Illinois 61629-6490, represents that it is the assignee of the entire right, title and interest in and to the above-identified application, Application No. 10/788,431, filed February 27, 2004 for ENGINE VALVE ACTUATOR in the name of Scott A. Leman, as indicated by the assignment duly recorded in the United States Patent and Trademark Office at Reel 012911, Frame 0326 on June 21, 2004. Assignee, Caterpillar, Inc., further represents that it is the assignee of the entire right, title and interest in and to U.S. Patent No. 6,732,685, as indicated by assignment(s) duly recorded in the United States Patent and Trademark Office at Reel 012911, Frame 0326 on May 20, 2002.

To obviate the double patenting rejection of claims 3-8, assignee hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. §§ 154 to 156 and 173, as presently shortened by any terminal disclaimer, of prior Patent No. 6,732,685. Assignee hereby agrees that any patent so granted on the instant application shall be enforceable only for and during

such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, Assignee does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. §§ 154 to 156 and 173 of the prior patent, as presently shortened by any terminal disclaimer, in the event that the prior patent later expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or in part, is terminally disclaimed under 37 C.F.R. § 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Applicant respectfully traverses 35 U.S.C. § 103(a) rejection of claims 12 and 15-20 as being obvious over Fuller Jr. et al. No *prima facie* case of obviousness has been established with respect to claims 12 and 15-20 for at least the reason that Fuller Jr. et al. does not disclose or suggest every claim element. For example, independent claim 12, from which claims 15-20 depend, is directed toward a method of controlling an engine that recites a combination of steps including, among other things, moving a valve from a first position to a second position; moving the valve from the second position to an intermediate position between the first and second positions; and holding the valve in the intermediate position. Fuller Jr. et al. fails to disclose or suggest a method having all the recited claim elements.

In the Office Action, the Examiner correctly recognized that Fuller Jr. et al. fails to disclose holding a valve in an intermediate position, but suggested that an intermediate position would be inherent. However, the apparatus of Fuller Jr. et al. is incapable of holding a valve in an intermediate position. Specifically, Fuller Jr. et al. teaches that when it is desired to hold an exhaust valve open, a small piston (66) and a hollow piston (50) are driven apart to the limits of their outward motion, the two pistons forming a fluid ram which holds the exhaust valve open. See Fuller Jr. et al., col. 4, lines 22-34. Clearly, the small piston and hollow piston being driven apart to the limits of their outward motion does not allow for an intermediate position. Fuller Jr. et al. also states that when the exhaust valve is held open, a pushrod (26) may freely reciprocate within its chamber (56). See Fuller Jr. et al., col. 4, lines 22-34. Because the pushrod freely reciprocates when the exhaust valve is held open, the position at which the exhaust valve is held open must be outside of the range through which the pushrod normally drives the exhaust valve and not at an intermediate position where the push rod would interfere.

In addition to the apparatus of Fuller Jr. et al. being incapable of holding a valve in an intermediate position, there is no suggestion or motivation to modify the teachings of Fuller Jr. et al. In particular, the apparatus of Fuller Jr. et al. is configured to disable a cylinder by deactivating an intake valve. By holding an intake valve at any position less than fully open, the apparatus would be less likely to achieve its purpose of deactivating an associated cylinder.

Because Fuller et al. fails to disclose or suggest all of the limitations of claims 12 and 15-20, no *prima facie* case of obviousness has been established with respect to

claims 12 and 15-20. Accordingly, Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 12 and 15-20 be withdrawn.

Applicant respectfully traverses 35 U.S.C. § 103(a) rejection of claims 12 and 15-19 as being obvious over Arrieta. No *prima facie* case of obviousness has been established with respect to claims 12 and 15-19 for at least the reason that Arrieta does not disclose or suggest every claim element. As indicated above, independent claim 12, from which claims 15-19 depend, is directed to a method of controlling an engine that recites a combination of steps including, among other things, moving a valve from a first position to a second position; moving the valve from the second position to an intermediate position between the first and second positions; and holding the valve in the intermediate position. Arrieta fails to disclose or suggest any method having at least these claim elements.

In the Office Action, the Examiner correctly recognized that Arrieta fails to disclose holding a valve in an intermediate position, but suggested that an intermediate position would have been obvious. However, the apparatus of Arrieta is incapable of holding a valve in an intermediate position. Specifically, Arrieta teaches that when the intake valves are depressed and held open, rotation of a cam (45) becomes ineffectual. See Arrieta, col. 4, lines 1-22. Clearly, because the cam becomes ineffectual when the intake valves are held open, the position at which the intake valves are held open must be outside of the range through which the cam normally drives the intake valves and not at an intermediate position where the cam would interfere.

In addition to the apparatus of Arrieta being incapable of holding a valve in an intermediate position, there is no motivation to modify the teachings of Arrieta in a

manner that would allow it to do so. In particular, the apparatus of Arrieta is configured to disable a cylinder by deactivating an intake valve. By holding an intake valve at any position less than fully open, the apparatus would be less likely to achieve its purpose of deactivating an associated cylinder. Further, Arrieta teaches that the intake valves are held open so that drag does not arise, leaving the inoperative cylinder free to reciprocate. See Arrieta, col. 4, lines 22-25. Holding an intake valve at any position less than fully open would generate some amount of drag. This increase in drag would depart from the intended purpose of the Arrieta apparatus.

Because Arrieta fails to disclose or suggest all of the limitations of claims 12 and 15-19, no *prima facie* case of obviousness has been established with respect to these claims. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 12 and 15-19 be withdrawn.

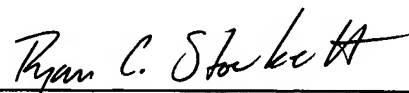
In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: January 14, 2005

By:   
Ryan C. Stockett  
Reg. No. 53,642

**AMENDMENTS TO THE DRAWINGS:**

The attached sheets of drawings include changes to Figs. 2 and 7-9.

Attachments:        Three Replacement Sheets, including Figs. 2 and 7-9.